

Applicants herein amend claims 20 and 23 to clarify that the cross-section shown in Fig. 1B is elliptical and not ellipsoid. Applicants show claims 20 and 23 in their amended form in the Appendix in accordance with 37 CFR §1.121(c)(1)(ii). Accordingly, Applicants submit that this objection is overcome.

Rejection under 35 USC §103

Claims 1-7 were rejected as being unpatentable over Armantrout '442 (previously cited) in view of newly cited U.S. Patent No. 3,711,344 to Pierce (Pierce '344). Applicants respectfully traverse the rejection.

Armantrout '442 discloses the preparation of a double base propellant binder comprising nitrocellulose dissolved in acetone and a plasticizer. The mixture is mixed with dry sparge air mixing, and the mixture is stripped of water by continued dry sparge air mixing and application of heat.

Pierce '344 discloses processing of nitrocellulose with an isocyanate crosslinker to form a polymeric binder for a solid propellant grain. Gassing of the propellant grain is prevented and propellant grains with substantially void-free properties are prepared.

In contrast, claim 1 of the present invention recites a lacquer composition useful as a propellant, comprising, among

other things, about 15 to 70 wt% of an organic solvent, from about 0.1 to about 2.5 wt% of a stabilizer, and nitrocellulose, wherein the lacquer composition has a viscosity of less than ten million centipoise when processed, and wherein the lacquer composition is processed into perforated propellant grains.

Applicants submit that the present invention is distinguishable from Armantrout '442 and Pierce '344, taken individually or in combination. Neither Armantrout '442 nor Pierce '344 disclose or suggest use of 15-70 wt% of a solvent. Moreover, neither Armantrout '442 nor Pierce '344 disclose or suggest that their respective propellants should have a viscosity of less than ten million centipoise when processed, as particularly claimed in claims 1 and 7.

Further, neither Armantrout '442 nor Pierce '344 discloses or suggests processing the lacquer into perforated propellant grains. Applicants submit that Pierce '344 actually teaches away from this particular limitation recited in claims 1 and 7 because Pierce '344 discloses methods of making nitrocellular propellants that are substantially void-free (see Abstract and col. 1, lines 40-44). For the above reasons, Applicants submit that the present invention is not obvious in view of Armantrout '442 or Pierce '344 taken either individually or in combination, and that this rejection is overcome.

Claims 19-24 were rejected as being unpatentable over Armantrout '442 in view of either U.S. Patent No. 5,682,013 to Smith et. al. (Smith '013) or U.S. Patent No. 4,094,248 to Jacobsen (Jacobsen '248). Applicants respectfully traverse the rejection.

Armantrout '442 is discussed above. Smith '013 discloses a circular gas generating body and a burn inhibitor layer pressed thereon. Jacobsen '248 discloses propellant grains having longitudinally grooved hexagonal configurations.

Applicants submit that neither Armantrout '442 nor Smith '013 and/or Jacobsen '248 disclose or suggest the present invention, either individually or in any combination. Like Armantrout '442, neither Smith '013 nor Jacobsen '248 discloses or suggests use of 15-70% solvent. Moreover, like Armantrout '442, neither Smith '013 nor Jacobsen '248 discloses or suggests a lacquer viscosity of less than ten million centipoise when processed.

Accordingly, Applicants submit that the present invention is not obvious over any combination of Armantrout '442, Smith '013, and/or Jacobsen '248. Therefore, Applicants submit that this rejection is overcome.

Applicants submit that the claims are in condition for allowance and respectfully request reconsideration and early favorable action by the Examiner.

If the Examiner believes a telephone conference would aid in the continued prosecution of this application, the Examiner is invited and encouraged to contact Applicants' representative at the telephone number listed below.

The Examiner is authorized to charge any fees, or credit any overpayments, associated with this correspondence to Deposit Account 23-1665.

Respectfully submitted,

WILLIAM L. O'MEARA ET AL.

By Todd E. Garabedian
Todd E. Garabedian, Ph.D.
Registration No. 39,197
Attorney for Applicants

WIGGIN & DANA
One Century Tower
New Haven, CT 06508

Telephone: (203) 498-4400
Fax: (203) 782-2889

Date: 8 October 2001

APPENDIX

CLAIM AMENDMENTS UNDER 37 CFR §1.121(c)(1)(ii)

Claims 20 and 23 are **REWRITTEN** as follows:

20. (Amended) The lacquer composition of claim 1, wherein said processed perforated propellant grains have an [ellipsoid]
elliptical cross-section.

23. (Amended) The lacquer composition of claim 7, wherein said processed perforated propellant grains have an [ellipsoid]
elliptical cross-section.